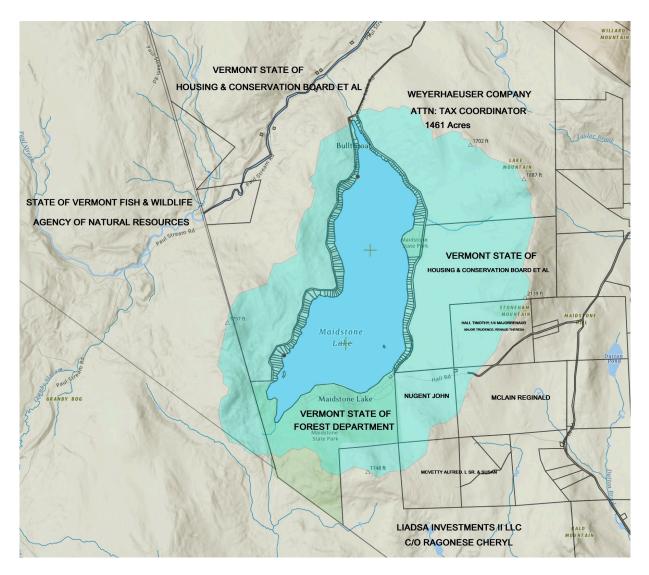
Reclassification of Maidstone Lake Essex County, Vermont September 5, 2021



Major Stakeholders Surrounding Maidstone Lake and Its Watershed (area shaded green)

Petitioner:

Town of Maidstone, Vermont
PO Box 118
Guildhall, VT 05905

Petition Form Submittal Instructions

• If submitting via US post:

Mail to:

Lakes and Ponds Program
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620

- o Please submit a CD or flash drive for petitions that contain large files (1 MB or greater)
- Petitions can also be submitted via email to the following address:
 <u>oliver.pierson@vermont.gov</u> with the Subject Line of "Reclassification Petition" or "Reclassification Application"

Petitioner Name - Individual or organization	Town of Maidstone			
2. Address	Street/P.O. Box			
	508 Vermont Route 102, PO Box 118			
	Town State Zip Code			
	Guildhall	VT	05905	
3. Phone	(802) 676-3210	•		
4. Email of contact person	cvonalt@gmail.com			
5. Petition Preparer Name	Christopher von Alt			
6. Co-Sponsors	Maidstone Lake Association, Essex Coul Conservation District	nty Natura	al Resource	

7. Waterbody Name(s)	Maidstone Lake		
8. Portion of waterbody for petition	Location (add stream reach id if applicable)	Waterbody Coordinates (DD)	Elevation (ft.)
	From:	Latitude: 44.66 N	1,348 feet
	То:	Longitude: -71.65 W	

Page 2 of 20

9. Petition Type (<i>Check one</i>) □ Reclassification (stream / river)	X Reclassification (lake or pond)	
---	---	--

Reclassification Only (#x)			
10. Waterbody Use	Use:	Proposed:	Current Use:
proposed to be	☐ Aquatic Biota	A(1)□ A(2)□ B(2)□	B(2)
reclassified, current, and		./(1) = ./(2) = .7(2) =	7/01
proposed classification.	☐ Aquatic Habitat	A(1)□ A(2)□ B(2)□	B(2)
See Vermont Water	X Aesthetics	A(1)X A(2)□ B(2)□	B(2)
Quality Standards §29A-			
306 for description of	☐ Fishing	A(1)□ A(2)□ B(2)□	B(2)
each use	V Continue and in a	A/1\V A/2\□ D/2\□	B(2)
	X Swimming	A(1)X A(2)□ B(2)□	5(2)
	☐ Boating	A(1)□ A(2)□ B(2)□	B(2)
	☐ Public Water Source	A(1)□ A(2)□ B(1)□ B(2)□	B(2)
011	_ 5:		
Other	☐ Riparian Habitat	A(1)□ A(2)□ B(1)□ B(2)□	
	☐ Rare Species	5(2)	
	☐ Significant Natural		
	Communities		
	☐ Upland Uncommon		
	Natural Community		
	☐ Highest Priority		
	Riparian Connectivity		
	☐ Exemplary Surface		
	Waters		
	☐ Highest Priority		
	Habitat Block,		
	Connectivity Block, and		
	Interior Forest Block		

Page **3** of **20**

Reclassification Criteria	
Reclassification Criteria	See Attachement 11
11. List specific criteria	Aquatic Biota:
per the Vermont Water Quality Standards	Biological criteria (see Appendix G. biocriteria for fish and macroinvertebrate
(2017), Environmental	communities in Vermont wadeable streams and rivers - Vermont Water Quality
Protection	Standards, 2017)
Rule Chapter 29A	☐ Numeric water quality criteria (e.g., appended data records)
	☐ Documentation of Rare, Threatened or Endangered species
	☐ Documentation of Rare and Irreplaceable Natural Area or significant natural
	community
	□ Documentation of numeric water quality chemistry (e.g., nutrient levels, turbidity, dissolved oxygen levels, alkalinity, pH)
	□ Documented absence of toxic or radioactive substances
	☐ Undeveloped riparian zones
	☐ Limited human activity within the watershed
	Aquatic Habitat:
	□ Natural Flow Regime (Documented attainment of hydrology and stream
	protection criteria - § 29A-304 of the Vermont Water Quality Standards, 2017)
	□ Temperature (data appended)
	☐ Documentation of Rare, Threatened or Endangered species
	☐ Documentation of Rare and Irreplaceable Natural Area or significant natural
	community
	☐ Undeveloped riparian zones
	☐ Limited human activity within the watershed
	☐ Other Aquatic Habitat Assessments (Describe or append assessment used)
	Aesthetics:
	X Documented aesthetic qualities and characteristics
	X Documented water characteristics, flows, water level, bed and channel
	characteristics, and flowing and falling waters in their natural condition.
	X Documented maintenance of level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters (for lakes only).

Page 4 of 20

Page **5** of **20**

Recreational Swimming:
X Prospective waters achieve and maintain a level of water quality
compatible with very good or excellent quality swimming and other primary contact recreation with negligible risk of illness or injury from conditions that are a result of human activities.
X Areas where existing swimming use has been determined to be present
that have consistent <i>E. coli</i> values below <i>E. coli</i> criterion and which, over some appreciable distance, also possess certain high-quality features.
X Well-known locally or regionally as a swimming area;
☐ Documented pool(s) for swimming and/or water features that are
enjoyable for swimming or bathing including chutes, cascades, waterfalls,
cliffs, jumping rocks;
Public Water Source:
$\hfill\Box$ Existing A(2) was never developed and/ or was developed but then
abandoned
$\hfill\Box$ or, prospective waters are currently managed, as necessary, for consistency
with use as a public water source. Where sustained direct contact with the
water occurs, waters shall be managed to achieve and maintain a negligible
risk of illness or injury from conditions that are a result of human activities,
$\hfill\Box$ or, prospective could be managed to achieve and maintain a uniformly
excellent character and a level of water quality highly suitable for use as a
public water source with filtration and disinfection or other required
treatment.

Page **6** of **20**

12. Purpose and need for reclassification – i.e., why is the change in classification now warranted? (summary)	See Attachment 12
13. Town(s) adjacent to	See Attachment 13
proposed waterbody	
(append letters of	
support from	
municipality and/or	
Regional Planning	
Commission and/or	
Natural Resource Conservation District	
and/or watershed	
organization	

14. Potentially	Additional information should be attached and listed in box 14.
interested parties (abutting landowners, municipal and civic organizations, business interests, etc.)	See Attachment 14
Provide names, address and phone numbers for	
each party.	

Page **7** of **20**

15. Supporting	Required
Documentation (maps can be created using the ANR Atlas) *required	See Attachment 15
	 Map with location information and delineated area for petition with known public and private conserved land within the watershed
	Water quality monitoring data
	Map of Rivers and streams
	Map of lakes and Ponds
	Recommended
	One-page document describing:
	 Existing zoning or protection at town level that may preclude or support designation Additional map(s) that include: Watershed boundary, current land use, and waterbody encroachments, including roads and structures. Water quality and quantity impacts, including wastewater and stormwater, physical alterations, and (if available) stream geomorphic condition Land parcels conserved Photos of petition area Letter(s) of support
16. List of supporting materials attached	List attachment by number with names and dates: (ex. 1. Map of Waterbody to be Reclassified 4/5/2017; 2. Photographs of Waterbody for Reclassification 4/5/2017; 3. One Page Supporting Document 4/10/2017)
	See Attachment 16

Page **8** of **20**

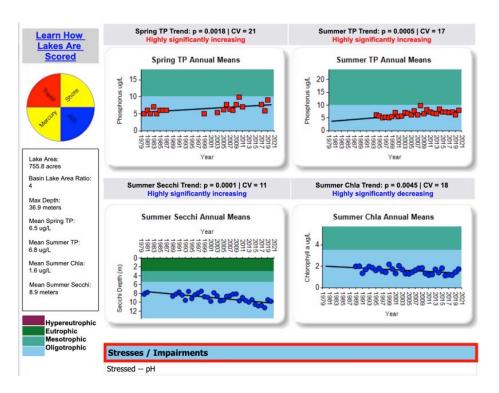
Lead Sponsor Inform	ation						
Lead Sponsor Name:	То	wn of Maids	tone, Doug	Lord Chair S	electboard		
Address: 508 Ve	rmont Ro	oute 102, PO	Box 118	City/Town:	Guildhall		
State: VT	Zip:	O5905	Phone:	(802) 676-3	210		
Email Address:	lougcaro	llord@gmail	.com				
Lead Sponsor Signate	ure:	Doug L	ord			Date:	09/05/2021
Co-Sponsor Signature	es						
Name: Jim Maz	zonna, P	President					
Organization: Maidst	one Lake	e Association	1				
Co-Sponsor Signature	e:	Jlm Mazz	onna			Date: (09/05/2021
Name: Heather	Johnson	n, District Ma	anager				
Organization: Essex (County N	latural Resou	rce Conser	vation Distric	t		
Co-Sponsor Signature	e:	blotherJohn	0			Date: (09/05/2021
Name:							
Organization:							
Co-Sponsor Signature	e:					Date:	
Name:							
Organization:							
Co-Sponsor Signatur	۵۰					Date:	

Page **9** of **20**

DEC use					
Coordinates from / to	From (lat/long)		To (lat/long)		
of affected area	44.66646, -71.6494	15	44.632634, -71.661638		
Elevation	At mouth: North end of la	ke	At source- 6	end of blue line:	
	422 m				
Total drainage area km ² at mouth or area of standing water in acres	3.1 sqkm (area of maidstone lake) Drainage are proposed was			12.5 sqkm Area of Watershed	
Land use	% Natural	% Develope	d	% Agricultural	
	92	8		0	
support specific use proposed reclassification					
Bio site ID (RM as xx),	Bio Site ID		WBID		
WBID	NA		NA		
Map of waterbody,	Include attached map title below				
watershed and conserved lands in drainage	Map of conserved lands.pdf.				
Recommended Classification	A(1) for aesthetic conditions and swimming and primary contact recreation				

Page **10** of **20**

11.0 Reclassification Criteria



Maidstone Lake 2020 Score Card Showing Over 20 Years of Data

Aesthetic Conditions Use:

Aesthetic Qualities and Characteristics

Water characteristics, flows, water level, bed and channel

Maidstone Lake is a deep 756 acre oligotrophic lake that trends north south for 2.5 miles, with an average width of 0.5 miles. The lake contains very clear waters with mean summer Secchi depths exceeding 8.5 meters. A 100 foot plus deep canyon meanders along its center for about 1.5 miles, on a north south trend. Water flows into the lake through a great number of undocumented springs that surround the lake; there are over 100 culverts embedded in roads bordering about two-thirds of the lake that channel these flows into the lake. In addition, there are two main tributaries entering the lake that are noted in the GIS data, but the inflows from these tributaries have not been shown to balance the volume of water that exits the lake through the outlet works in an earthen dam located at the northern end of the lake. This dam, which was repaired in 2005 by Maidstone Rehold LLC, is now owned and managed by Vermont Fish and Wildlife. This dam is on the site of the first dam that was constructed in 1853 and used to operate a sawmill. That first dam reportedly raised the lake level by 6 feet from its natural state. The outflow through the dam forms Maidstone Brook, which flows into Paul Stream and then into the Connecticut River. The outlet works in the dam maintain a fairly constant lake level in the range of +/- 6-8 inches throughout the year at a nominal elevation of 1,348 feet above sea level; however, the lake is typically covered with ice for 5-6 months.

Page **11** of **20**

The 12.5 square kilometer lake watershed forms an amphitheater of conserved lands that are managed through a number of departments within the Vermont Agency of Natural Resources. The hills surrounding the lake rise some 200-300 feet above its shoreline. The lake's littoral zone, for the most part, is narrow due to the steep slopes that are found along most of the lakeshore. Typically, the lake's depth within 200 feet of the shore is over 10 meters. Until recently, the surrounding forests were subjected to extensive logging operations. One parcel, which is currently owned by the Weyerhaeuser Company, was extensively logged in 2019 and 2021.

The lakeshore is densely populated with over 200 building lots, most with no more than 100 foot frontage on the lake. Many homes are built right on the lake and do not provide adequate buffering of rain water. Approximately 40 homes are occupied year round. The population and use of the lake increases dramatically during the summer months. For the rest of the year, there is very little activity because the lake is typically covered with ice for at least five months. During this period, snowmobiling, snowshoeing, and ice fishing are the main activities.

For assessment of aesthetic uses, the DEC Watershed Management Division uses water quality information from field surveys. The Lay Monitoring Program that has been in place on Maidstone Lake for the past 30 years provides much of this information. Vermont DEC has performed many additional surveys and has sponsored improvements through the Lake Wise Program, education, and public outreach. The following chart, which is taken from the DEC Website, establishes and documents the aesthetic qualities and characteristics of Maidstone Lake since 1979. The link to this source is provided below; please select Maidstone Lake from the pull down menu to view this data online.

https://anrweb.vt.gov/DEC/IWIS/ReportViewer3.aspx?
Report=LakeScoreCard Current TrendsAndStatus&ViewParms=True

Analysis by DEC and the final 2021 Basin 16 Tactical Basin Plan clearly establish that Maidstone Lake exceeds and therefore already meets the water quality standards for an A(1) designation for aesthetic uses. A comparison of the requirements for aesthetic use vs the actual conditions measured in the lake are provided in the table below.

https://dec.vermont.gov/sites/dec/files/WID/WPP/2021%20Upper%20Connecticut%20River%20Tactical%20Basin%20PlanSigned.pdf

Parameter	Requirements for Aesthetic Uses A(1)	Maidstone Lake Measurements
Total Phosphorus	Less than 12 ug/l	6.8 ug/l
Secchi Disk Depth	Greater than 5 m	8.9 m
Chlorophyll -a	Less than 6 ug/l	1.6 ug/l
Turbidity	Less than 10 NTU	?
Dissolved Oxygen	Greater than 6 mg/l	10.9 mg/l

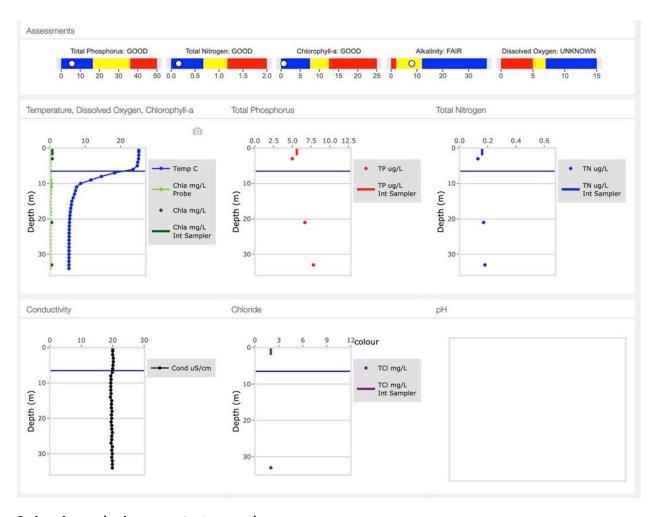
Comparison showing Maidstone Lake exceeds the required values for designation as an A(1) lake for aesthetic conditions use

Page 12 of 20

A 2018 Lake assessment report complied by DEC may be found at:

file:///Users/chris/Library/Containers/com.apple.mail/Data/Library/Mail%20Downloads/915C108C-F5BB-49BC-9D60-61233E9E493A/MAIDSTONE_2018_500.html

The following water quality data are contained in that report:



Swimming and primary contact recreation uses:

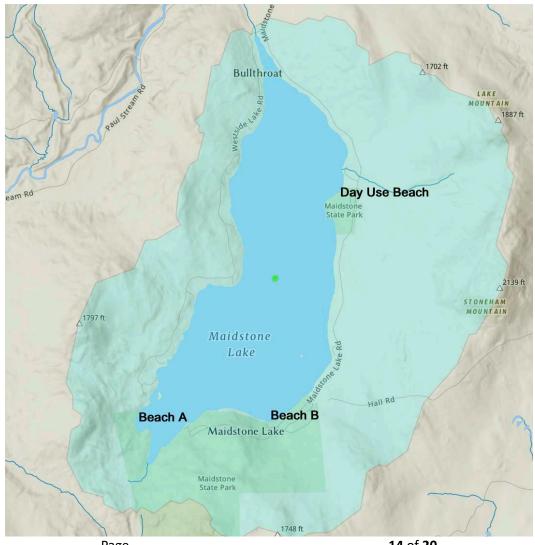
There are over 200 house lots on Maidstone Lake, and many of the owners enjoy swimming in Maidstone's crystal clear waters during the summer months. These camps occupy about two thirds of the shoreline. In addition, there are three swimming areas associated with the Maidstone State Park: Camping Beaches A & B, and the Day Use Area (Please see map below for their locations). The water at all three of these sites is sampled weekly during the summer months, while the park is open, by the Vermont Department of Forestry and Parks. Three years of the data that have been collected are included with this petition. (See attachment: Swimming data raw.pdf) The three data sets start in 2017 and end in 2021. We have been unable as of yet to obtain data for 2019 and 2020. The geometric mean E. coli counts in the EPA's preferred units of MPN/100ml for each year for which we have data are provided in the table below. None of the samples taken during any of the years was above 60 MPN/

Page 13 of 20

100ml. The data provided clearly shows that the number of E. Coli organisms in the Maidstone Lake waters at these public swimming areas is far below the **maximum acceptable geometric mean of 126 organism/100ml**, which is the criteria established in VWQS for the swimming and primary contact recreation use in lakes that are classified as A(1). Maidstone Lake should therefore be reclassified to an A(1) lake for swimming and primary contact recreation.

Year	Camping Area A	Camping Area B	Day Use Area
2017	4.7	5.4	5.8
2018	2.9	4.2	4.7
2021	3.3	3.4	3.0

Yearly Maidstone Lake E. coli Measurements Taken at 3 Beaches by Department of Forestry and Parks Geometric Mean of a Representative 60 day Period (June -August) in MPN/100 ml



Location of beaches where samples are taken

12. Purpose and Need for Reclassification

The reasons and need to reclassify Maidstone Lake from a B(2) lake for aesthetic conditions and for swimming and primary contact recreation to an A(1) lake for aesthetic conditions and for swimming and primary contact recreation are:

- (1) Maidstone Lake is one of the few remaining oligotrophic jewels in Vermont, and in its natural condition has total average phosphorus concentrations well below 7 ug/l based on Lay Monitoring measurements that have been taken over the past 25 years (1995 through 2020). These measurements indicate there has been a steady increase in the total phosphorus concentration in the lake of approximately 0.1 ug/L/year. This trend is disturbing because it has resulted in a 43% increase in total phosphorus levels over the past 25 years. Many other oligotrophic lakes in Vermont have also been found to have this disturbing eutrophic trend, and in many lakes these trends are much more severe. It is not fully understood why phosphorus concentrations are increasing in oligotrophic lakes. The root causes may be attributed to impacts of the climate emergency we are facing, land use disturbances within the riparian zones of the lake and the tributaries that feed it, or other sources that have not been discovered yet. If the root causes of this disturbing eutrophic trend are not established and anti-degradation measures taken, this jewel will be lost.
- (2) Vermont Statute 10 V.S.A. Chapter 47 established water body classifications in Section 1252 and assigned these classifications to lakes in Vermont in Section 1253. The VWQS established uses, criteria, and anti-degradation requirements for each of these classifications. The VWQS further established that Maidstone Lake is classified as a B(2) lake for all uses as well as a cold water fish habitat.1 (See VWQS Appendix F (c)). As shown in Table 1 above, the water quality criteria for aesthetic conditions under Maidstone Lake's current classification as a B(2) lake represent a severe degradation from the lake's documented natural condition. The B(2) classification is therefore inconsistent with the VWQS Anti-degradation Policy (Section 29A-105) (c) (1). DEC lawyers contend that the State of Vermont is not required to take any action to stem the degradation of a lake's water quality until it falls below the criteria established for its specified classification. Allowing the quality of water in Maidstone Lake to degrade to below the criteria for a B(2) lake will increase the likelihood of summer algae blooms, will increase the possibility of the Lake's waters being closed to swimming, and will make the Lake more inviting to invasive species, therefore reducing the value of lakeshore properties. To be specific, if Maidstone Lake remains classified as a B(2) lake, the increase in the concentration of phosphorus that is allowed will accelerate its deterioration, which will significantly damage the enjoyment of uses such as boating, fishing, and swimming and is therefore not in the public's interest.
- (3) As stated above, the data provided clearly shows that the number of E. Coli organisms in the Maidstone Lake waters at these public swimming areas is far below the **maximum acceptable geometric mean of 126 organism/100ml**, which is the criteria established in VWQS for the swimming and primary contact recreation use in lakes that are classified as A(1). Maidstone Lake should therefore be reclassified to an A(1) lake for swimming and primary contact recreation.
- (4) The issue at hand is this: Maidstone Lake is in excellent condition and exceeds the VWQS for an A(1) lake for aesthetic conditions, for fishing, and for swimming and primary contact recreation, but is currently designated as a B(2) lake. This means that Maidstone Lake's water quality is being managed by the DEC to a much lower standard than it should be. This situation is not in the best interests of the general public and local municipalities, and therefore must be corrected before the costs associated with implementing corrective measures becomes too high. Consider the significant

¹ Vermont Agency of Natural Resources, Department of Environmental Conservation, Watershed Management Division, 2017, Vermont Water Quality Standards Environmental Protection Rule Chapter 29A, Appendix F (c) pp. 66, 40.

degradation that has happened to the water quality of Lake Champlain and several other lakes in Vermont. A study conducted by UVM demonstrates that declining water quality resulted in significant, measurable declines in property values on Lake Champlain. In addition, degradation has caused beach closures, fishing restrictions during the summer, and the infestation of lakes by invasive aquatic species that are extremely expensive to control and combat. It is obviously not in the best interests of our communities to let the water quality in Maidstone Lake degrade to this point.

13. Town(s) adjacent to Maidstone, Vt

Granby:

Town Clerk: Sheryl Brown **Phone**: 802-328-3611 **Fax**: 802-328-2200

Email: townofgranby@myfairpoint.net

Address: 9005 Granby Road; Granby, VT 05840

An email was sent to the town requesting support and there was no response.

Guildhall:

Town Clerk: George Blakeslee Phone: 802-676-3797 Fax: 802-676-3518

Email: townclerk@guildhallvt.org

Address: 13 Courthouse Drive (Physical) P.O. Box 10 (Mailing) Guildhall, Vermont 05905

For letter of support see Attachment: Letters of Support.pdf

Brunswick

Town Clerk: Sharon Graham Phone: 802-962-5514 Fax:

Email: bruns321@sover.net

Address: 994 VT Rte 102; Brunswick, VT 05905

An email was sent to the town requesting support and there was no response.

Ferdinand

Town Clerk: Gina Vigneault Phone: 802-723-5900 Fax:

Email: utgoffice@myfairpoint.net Address: Island Pond, VT 05846

For letter of support see Attachment: Letters of Support.pdf

Regional Planing Commission

Northeast Vermont Development Association

POC: Frank Maloney, Water Quality Management Phone: 802-748-5181

Email: fmaloney@nvda.net

Address: 36 Eastern Ave, Suite 1, PO Box 630 St. Johnsbury, VT 05819

For letter of support see Attachment: Letters of Support.pdf

Natural Resource Conservation District

Essex County Natural Resource Conservation District

POC: Hannah Fay

Phone: <u>(802) 424-5353</u> Fax: Email: hfay.essexnrcd@gmail.com

Address: 5396 VT-105, Brunswick, VT 05905

For letter of support see Attachment: Letters of Support.pdf

List of abutting land owners:

See attached file:

Maidstone abutting landowners.pdf

see attached file: Signatures_lake_owners.pdf

Civic Organization:

Maidstone State Park

Name: Susan K. Bulmer | Northeast Parks Regional Manager (she/her)

Address Vermont Agency of Natural Resources | Department of Forests, Parks & Recreation State Parks Division, Barre District Office 5 Perry St, Suite 20 | Barre, VT 05641

Phone 802-476-0181 office | 802-371-8918 cell

Fax: 802-476-0129

Email: susan.bulmer@vermont.gov

An email was sent requesting support, we informed that they could not take a position on the petition because they would be part of the evaluation process

Forests, Parks & Recreation (West Mountain Wildlife)

Name Bushey, Louis C

Address St Johnsbury

Phone Cell: 802-535-8410

Email louis.bushey@vermont.gov

An email was sent requesting support, we informed that they could not take a position on the petition because they would be part of the evaluation process

Business Interest:

Weyerhaeuser

Name: Christopher Fife

Address

Phone: 207-453-1051 or 802-473-0866

Email: Name: chris.Fife@weyerhaeuser.com

At least two emails were sent, but we never received a letter of support

Abutters with parts of their parcels in the Maidstone Lake watershed:

John Nugent, Span# 372-115-10230

Timothy Hall, Major Renaud, Span # 372-115-10141

MCLAIN REGINALD, Span# 372-115-10118

MCVETTY Alfred & Susan, Span# 372-115-10237

Liadsa Investments II LLC, Span # 372-115-10173

These abutters were not contacted.

15 Supporting Documentation

15.1 Map with location information and delineated area for petition with known public and private conserved land within the watershed:

Map of conserved lands.pdf.

Roads surrounding Maidstone Lake .pdf

15.2 Water quality data:

Water Monitoring Data from DEC.xlsx

Swimming data raw.pdf

15.3 Map of Rivers and Streams:

Lakes, rivers, streams.pdf

15.4 Recommended Supporting Data

15.4.1 Town Zoning Protection Plan:

Maidstone Lake zoning.pdf

15.4.2 Photos of the Petition Area:

Picture of Maidstone Lake 062319.pdf

15.4.3 Letters of Support

Letters of Support .pdf

 $Signatures_lake_owners.pdf$

15.6 Additional Data

This information was sent out to all residents of the Town of Maidstone to make sure they were aware the petition was being submitted:

Answers to Questions_final.pdf

16.1 List of Supporting Material Attached

File Name	Туре	Date	Size KB
Maidstone_lake_reclass_082921	.pdf	08/29/21	1,100
Maidstone abutting landowners	.pdf	08/29/21	475
Map of conserved lands	.pdf	08/29/21	328
Roads surrounding maidstone lake	.pdf	08/29/21	209
Water Monitoring Data from DEC	.xlsx	08/29/21	90
Maidstone Lake zoning	.pdf	08/29/21	176
Picture of Maidstone Lake 062319	.pdf	08/29/21	517
Letters of Support	.pdf	08/29/21	1,000
Signatures_lake_owners	.pdf	08/29/21	935
Answers to Questions_final	.pdf	08/27/21	209
Swimming data raw	.pdf	08/31/21	4,600

Signature Certificate

Document Ref.: BVSPG-RXXZT-REIZO-SJ5TQ

Document signed by:



Jlm Mazzonna

Verified E-mail: jmazzonna@gmail.com

72.71.211.147





Heather Johnson

Verified E-mail: essexnrcd@gmail.com

99.196.168.84

Date: 06 Sep 2021 20:12:56 UTC





Doug Lord

Verified E-mail: dougcarollord@gmail.com

64.222.98.118

07 Sep 2021 10:59:54 UTC

Doug Lord

Document completed by all parties on: 07 Sep 2021 10:59:54 UTC

Page 1 of 1



Signed with PandaDoc.com

PandaDoc is a document workflow and certified eSignature solution trusted by 25,000+ companies worldwide.

